

## **REMARKS**

Claims 1-6 are now pending in the application. Claim 6 is allowed and Claims 1-5 stand rejected. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

## **ALLOWABLE SUBJECT MATTER**

The undersigned gratefully appreciates the allowance of Claim 6.

## **REJECTION UNDER 35 U.S.C. § 103**

Claims 1, 2, 4, and 5 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Bateman (U.S. Pat. No. 3,937,575; hereinafter "Bateman") in view of Wetteborn (U.S. Pat. No. 5,949,530, hereinafter "Wetteborn") and Amazajerdian (U.S. Patent No. 5,317,376, hereinafter "Amazajerdian"). These rejections are respectfully traversed.

Initially, Applicants note Bateman appears to disclose a system for determining a distance between a target T and a laser diode 10 determined by the time it takes for a pulse of the laser diode 10 to be emitted and reflected back to the laser diode 10 so that the laser diode 10 senses its own returned energy (see at least Column 3, Lines 20-30 and Column 4, Lines 50-56). When the laser diode 10 senses its own returned energy, a timer TM stops to provide an indication as to the distance of the object from the laser diode 10. Bateman does not disclose whatsoever a control subsystem for determining a repetition period between optical pulses and for applying a signal to an oscillator to adjust a controlled repetition rate, nor using a reflection from a target to control the generation of subsequent optical pulses, as claimed in Applicants' application.

With reference to Wetteborn, Wetteborn appears to disclose the use of a timer activated by a light pulse 12 and deactivated by a returned light pulse 12' to calculate the range D of the object from the relevant pulse transit time T (see at least Column 5, Lines 55-68). As previously discussed with the Examiner, Wetteborn does not disclose a control subsystem for determining a repetition period between optical pulses and for applying a signal to an oscillator to adjust a controlled repetition rate, nor using a reflection from a target to control the generation of subsequent optical pulses, as claimed in Applicants' independent Claims 1 and 5.

Regarding Amazajerdian, Amazajerdian appears to disclose a system for determining the speed of an aircraft, an angle of attack of the aircraft and slideslip. The system of Amazajerdian determines the velocity of the aircraft by splitting a high energy pulse 29 into a target beam 37 and a local oscillator beam 35 for comparison. The target beam 37 is directed to an aircraft a known distance away from the source, such as 30 meters (see at least Column 5, lines 64-66). The system of Amazajerdian requires that the distance away from the target be known, as the range is required to properly modify the local oscillator beam for heterodyne comparison to determine the aircraft velocity with respect to airmass. Specifically, the acousto-optic modulator (AOM) 5 modifies the local oscillator beam based on the timing required for the transmitted target beam to travel over the designated range and back (see at least Column 4, 53-56). Thus, at best, Amazajerdian teaches modifying a frequency of a local oscillator beam based on a known time of flight.

In contrast, independent Claim 1 recites:

a control subsystem responsive to said second portion of said optical energy for determining a repetition period between said optical

pulses, and for applying a signal to said oscillator to adjust said controlled repetition rate,

said first portion of said optical energy being reflected by said target back to said optical subsystem for use to control the generation of subsequent optical pulses from said oscillator in relation to a round trip time of flight of said optical pulses between said apparatus and said target, said time of flight being used to extrapolate a distance between said laser oscillator and said target. (Emphasis added.)

Additionally, independent Claim 5 recites:

causing said first portion of optical energy generated by said optical pulses to be directed at said target and using said collected optical energy to further control the generation of said subsequent relaxation oscillations, and therefore subsequent optical pulses, in relation to a round trip time of flight of said collected optical energy between said apparatus and said target; and. . . . (Emphasis added.)

In view of the above discussion, Applicants respectfully assert that these features as claimed are not taught or suggested whatsoever by Bateman, Wetteborn, or Amazajerdian, either alone or in combination.

With regard to the Office's combination of Bateman, Wetteborn, and Amazajerdian, Applicants respectfully submit that the combination of references cited by the Office does not present a *prima facie* case of obviousness. The establishment of a *prima facie* case of obviousness requires that three basic criteria be met: 1) some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings, 2) that there must be a reasonable expectation of success, and 3) that the prior art reference or references must teach or suggest all the claim limitations. See, e.g., *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Moreover, the teaching or suggestion to make the claimed combination and the

reasonable expectation of success must both be found in the prior art, and not based on an applicant's disclosure. *Id.*

Applicants respectfully submit that there is no suggestion or motivation to make the Office's combination. Specifically, if proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984) MPEP 2143.01. Additionally, if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (C.C.P.A. 1959) MPEP 2143.01.

Amazajerdian discloses modifying a frequency of a local oscillator beam based on a known time of flight. To modify Bateman with Amazajerdian would render Bateman unsatisfactory for its intended purpose, and improperly modifies the principle of operation of Bateman, as the purpose of Bateman is to determine a distance of an object from a laser diode 10 based on a time of flight by using a timer, while Amazajerdian, in direct contrast to the purpose of Bateman's invention, teaches modifying a frequency based on a known time of flight.

In view of the above discussion, as neither Bateman, Westerborn, or Amazajerdian teach or disclose each and every element of Applicants' Claims 1 and 5, Applicants respectfully assert that the Examiner has not presented a *prima facie* case of obviousness. Accordingly, Applicants respectfully request the Examiner to reconsider and withdraw the rejection of Claims 1 and 5 under 35 U.S.C. § 103(a).

With regard to Claims 2 and 4, Applicants note these claims depend directly from independent Claim 1, and, thus, should be in condition for allowance for the reasons set forth for Claim 1, above. Thus, Applicants respectfully request the Examiner reconsider and withdraw the rejections of Claims 2 and 4 under 35 U.S.C. § 103(a).

Claim 3 is rejected as being unpatentable over Bateman in view of Wetteborn and Amazajerdian as applied to Claim 1, and further in view of Meinzer (U.S. Pat. No. 5,267,016; hereinafter “Meinzer”). These rejections are respectfully traversed.

Applicants note that Claim 3 depends directly from independent Claim 1, and should be patentable and in condition for allowance for the reasons set forth above regarding Claim 1. Applicants respectfully refer the Examiner to the discussion of the Bateman, Wetteborn and Amazajerdian references with regard to Claims 1 and 5, above. With regard to Meinzer, Applicants respectfully submit that it is improper to combine Bateman and Wetteborn with Meinzer, as neither Bateman nor Wetteborn teach or suggest the desirability of using an optical beam splitter. Further, the use of an optical beam splitter would impermissibly modify the method of operation of Bateman and Wetteborn.

Accordingly, for at least these reasons, Applicants respectfully submit that Claim 3 is patentable and in condition for allowance. Thus, Applicants respectfully request the Examiner reconsider and withdraw the rejections of Claim 3 under 35 U.S.C. § 103(a).

### CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request

that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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